Feature-Identification and Data-Compression Software

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A report discusses the continuing development of Windows Interface for Nominal Displacement Selection (WINDS), a computer program for automated analysis of images of the Sun and planets acquired by scientific instruments aboard spacecraft. WINDS is intended to afford capabilities for identification of features, measurement of displacements and velocities, analysis of terrain and of atmospheres, and synthesis of animation sequences of images of terrains and atmospheres from small sets of samples by use of velocity-based interpolation. A major element of WINDS will be a nonlinear correlator capable of tracking small features in complex image sequences. For dynamic image sequences, the correlator will enable compression of data by factors >100. In processing image data, WINDS will take account of such factors as texture in image data, rotation of features during measurement intervals, effects of viewing and solar illumination angles, and vertical structures of atmospheres. WINDS will also take account of positions, aiming directions, and fields of view of cameras to determine three-dimensional feature structures by use of triangulation and stereoscopic analysis techniques.

This work was done by Eric De Jong and Jean Lorre of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*

This software is available for commercial licensing. Please contact Don Hart of the California Institute of Technology at (818) 393-3425. Refer to NPO-30360.